C-A OPERATIONS PROCEDURES MANUAL

4.94.4   MUON Building Access Security Gate Subsystem Check

Text Pages 1 through 7

Hand Processed Changes

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Revision 01

Approved by:_____ _____
                AGS Department Chairman   Date

A. McGeary

4.94.4 MUON BUILDING ACCESS SECURITY GATE SUBSYSTEM CHECK

1.   Purpose and Scope

        This procedure provides directions for the test and validation of the hardware portion of the muon building gate subsystem of the RHIC Particle Accelerator Safety System (PASS).

2.   Responsibilities

        2.1   The RHIC or AGS Safety Systems Group Leader shall ensure that this procedure is executed, at no greater than six month intervals, or at such times as required by the Radiation Safety Committee (RSC).

        2.2   The RHIC or AGS Safety Systems Group Leader shall review and initial the completed procedure checklist.

        2.3   The RSC Chairman (or his designee) shall review the test results and determine when retesting is required after changes in hardware or software have been implemented..

        2.4   Members of the RHIC or AGS Safety System Group shall, as designated, conduct and document this procedure.

        2.5   The software engineers shall ensure the configuration control of the software tested.

3.   Prerequisites

        3.1   This procedure may only be executed by members of the AGS or RHIC Safety System Group.

        3.2   This procedure requires two individuals trained in this procedure for proper execution.

        3.3   A Restricted Access zero key, Controlled Access #3 key, and Sweep/Reset #2 key.

        3.4   Standard electrical toolbag.

        3.5   Proper setup and calibration of the current source boards should have been done before executing this procedure.

        3.6   Programs loaded Divisions A & B for Peer 3 and recorded in PASS Engineering Change Log Book.

3.7 Peer 3 enclosure RSC is RS LOTO by AGS Safety Systems Group Leader Engineers.
Peer 3 (Tag #) _____
Peer 3 (Tag #) _____
RS LOTO Development System Access Connector (Tag #) _____

3.8 Prior to the execution of this procedure, the beam line shall be placed in a safe off condition by performing RS LOTO. RS LOTO of Booster F6 and BTA DH2&3 or equivalent approval by chair RSC prior to execution of this procedure.
RS LOTO applied _____

3.9 Notify the Operations Coordinator (OC) or the Main Control Room (MCR) supervisor that the Muon Building gate system is being tested.

3.10 Post Notices in the MCR and at the MGE1, MED3, and MED12 gates that the gate system is being tested.

4. <u>Precautions</u>

None

5. <u>Procedure</u>

This test will verify the following for both A and B divisions:

Door switch and crash glass switch
Strike solenoid and latch switch
Gate reset function and local indication
Sweep check station function and indication
Other indicator lamps at gate
MCR interface - AB Panelview 1400

5.1 From PASS Engineering Change Log Book, records software installed Peer 3, both divisions A & B.

Division A Compiler version _____

Division B Compiler version _____

Peer 3 Div. A Program version _____
Save date _____
Peer 3 Div. B Program version _____
Save date _____

5.2 MGE1 Gate Door switch, Crash Glass and Latch Switch (C1028007).

5.2.1 Perform a physical inspection of the gate to confirm its proper mechanical operation, that the position sensing limit switches are properly aligned and the integrity of the wiring. Check for simple exit through the gate by means of the inside doorknob.
Switch alignment OK _____
Wiring OK _____
Exit by doorknob OK _____
Door locked preventing entry from outside _____

5.2.2 MCR Panelview 1400 should display door open/not reset status.
Panelview display OK _____

5.2.3 Panelview should indicate OPEN for crash glass switch or latch switch or door switch open. Check A division hardware first, then B division. Note that B division has no latch switch.
Any A division switch open indicates OPEN on Panelview _____
All A division switches closed indicates NOT RESET on Panelview_____
Any B division switch open indicates OPEN on Panelview _____
All B division switches closed indicates NOT RESET on Panelview_____

5.3 MED3 Gate Door switch, and adjacent rollup door (C1028008)

5.3.1 Insure doors MGE1 and MED12 are closed.

5.3.2 Perform a physical inspection of the gate and adjacent rollup door to confirm its proper mechanical operation, that the position sensing limit switches on both the gate and rollup door are properly aligned and the integrity of the wiring. Check for simple exit through the gate by means of the inside doorknob, and no entry from outside.
Switch alignment OK _____
Wiring OK _____
Exit by doorknob OK _____
Door locked _____

5.3.3 MCR Panelview 1400 should display door OPEN for either gate or roll up door open.
Any A division switch open indicates OPEN on Panelview _____
All A division switches closed indicates NOT RESET on Panelview_____
Any B division switch open indicates OPEN on Panelview _____
All B division switches closed indicates NOT RESET on Panelview_____

5.4 MED12 Gate Door switch (C1028009).

    5.4.1 Perform a physical inspection of the gate to confirm its proper mechanical operation, that the position sensing limit switches are properly aligned and the integrity of the wiring. Check for simple exit through the gate by means of the inside doorknob, and no entry from outside.
Switch alignment OK _____
Wiring OK _____
Exit by doorknob OK _____
Door locked preventing entry from outside _____

    5.4.2 MCR Panelview 1400 should display door open/not reset status.
Panelview display OK _____

5.5 MGE1 Electric Strike and Status Lamps (C1028007)

    5.5.1 Use Panelview to select Peer3 SAFE STATE.
Check that CONTROLLED ENTRY lamp is lit _____
Check that #3 key with simultaneous release (S/R) will release electric strike but key or S/R alone will not _____
Simultaneous release should be audible at gate _____
Check that zero key is inoperative _____

    5.5.2 Use Panelview to select Peer3 R/A.
Check that RESTRICTED ACCESS lamp is lit _____
Check that zero key will release electric strike _____
Check that #3 key is inoperative with or without S/R _____

    5.5.3 Use Panelview to select Peer3 C/A.
Check that CONTROLLED ENTRY lamp is lit _____
Check that #3 key with simultaneous release will release electric strike but key or S/R alone will not_____
Simultaneous release should be audible at gate _____
Check that zero key is inoperative _____

5.6 MED3, MED12 Status Lamps (C1028008, C1028009).

    5.6.1 Use Panelview to select Peer3 SAFE STATE.
Check that amber CONTROLLED ENTRY lamp is lit at MED3 and MED12.
CONTROLLED ENTRY lamp at MED3 is lit _____
CONTROLLED ENTRY lamp at MED12 is lit _____

5.6.2   Use Panelview to select Peer3 R/A.
          Check that RESTRICTED ACCESS lamp is lit at MED3 and MED12.
          RESTRICTED ENTRY lamp at MED3 is lit _____
          RESTRICTED ENTRY lamp at MED12 is lit _____

5.6.3   Use Panelview to select Peer3 C/A.
          Check that amber CONTROLLED ENTRY lamp is lit at MED3 and MED12.
          CONTROLLED ENTRY lamp at MED3 is lit _____
          CONTROLLED ENTRY lamp at MED12 is lit _____

5.7   MGE1 Gate Reset Function (C1028007)

5.7.1   There is no local gate reset function for this remote access TV equipped gate.

5.7.2   With all but two #2 keys captive, attempt to reset MGE1 gate using PanelView
          button and #2 momentary keyswitch.
          PanelView does not indicate MGE1 GATE RESET _____

5.7.3   With all but last #2 key returned and captive reset MGE1 using Panelview
          button for MGE1 and #2 momentary keyswitch in the V1/Muon key panel and
          observe that Panelview indicates gate reset.
          Panelview indicates MGE1 GATE RESET _____

5.7.4   Check that Panelview indicates MGE1 not reset when door is opened. Check
          indication for both divisions.
          Panelview indicates gate not reset in A division for door open_____
          Panelview indicates gate not reset in B division for door open_____

5.8   MED3 Gate Reset Function (C1028008)

5.8.1   When #2 key is turned at control station and all switches are closed, gate should
          reset. Panelview should indicate MED3 GATE RESET.

5.8.2   GATE RESET lamp should light to indicate that MED3 gate is reset.
          Reset lamp lights _____
          Panelview indicates MED3 GATE RESET _____

5.8.3   Check that Panelview indicates MED3 not reset when door is opened. Check
          indication for both divisions.
          Panelview indicates gate not reset in A division for door open_____
          Panelview indicates gate not reset in B division for door open_____

5.9   MED12 Gate Reset Function (C1028009)

5.9.1 When #2 key is turned at control station and all switches are closed, gate should reset. Panelview should indicate MED12 GATE RESET.

5.9.2 GATE RESET lamp outside should light to indicate that MED12 gate is reset.
Reset lamp outside lights _____
Panelview indicates MED12 GATE RESET _____

5.9.3 Check that Panelview indicates MED12 not reset when door is opened. Check indication for both divisions.
Panelview indicates gate not reset in A division for door open_____
Panelview indicates gate not reset in B division for door open_____

5.10 Sweep Check Station Function, CS1 through CS4, passage through gate while sweep is maintained, loss of sweep on R/A when door is opened, and loss of sweep for crash.

5.10.1 Use Panelview to select Peer3 R/A.

5.10.2 At CS1 at center of Muon Ring Magnet, turn #2 key.
Sweep lamp does not light _____

5.10.3 Use Panelview to select Peer3 C/A.

5.10.4 At CS1 at center of Muon Ring Magnet, turn #2 key.
Sweep lamp flashes momentarily to indicate correct sweep sequence_____

5.10.5 At CS2 below staircase near MGE, turn #2 key.
Sweep lamp flashes momentarily to indicate correct sweep sequence_____

5.10.6 At CS3 at MED12 gate, turn #2 key.
Sweep lamp flashes momentarily to indicate correct sweep sequence_____

5.10.7 At CS4 at MED3 gate, turn #2 key.
Sweep lamp lights and stays on to indicate completion of sweep_____

5.10.8 Observe that Panelview 1400 indicates that the Muon Building area is swept _____

5.10.9 Exit MGE1with S/R and observe sweep lamp remains on _____

5.10.10 Reenter area with S/R and observe sweep lamp remains on _____

5.10.11 Exit area without S/R and observe loss of sweep _____

5.10.12 Repeat steps 5.11.4 through 5.11.6 except skip one station. AREA SWEPT lamp will not light and Panelview will indicate SWEEP NO GOOD. Panelview and lamps at gate do not light _____

5.10.13 Go back to the skipped station and turn #2 key. Sweep lamp does not light _____

5.10.14 Re-sweep area, go to R/A and open gate. Sweep is lost when gate is opened on R/A _____

5.10.15 Re-sweep area on C/A and operate crash button; observe loss of sweep_____

5.11 Restore area to original configuration.

5.11.1 Notify MCR OC that the system test is complete.

5.11.2 Remove posted notices in MCR and at MGE1, MED3, and MED12.

5.11.3 Remove LOTO of critical devices for this area.

5.12 The certification of the system is completed when the Safety System Group Leader and the RSC Chair approve the completed checkout sheets.

6. <u>Documentation</u>

Completed Muon Building Access Security Gate Subsystem Check (this procedure)

7. <u>References</u>

None

8. <u>Attachments</u>

None